

# New Species of *Ribes* (Grossulariaceae) from South America

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**ABSTRACT.** Two new Andean species from Ecuador and Colombia are described in the genus *Ribes*. *Ribes erectum* is a shrubby species characterized by elliptic and mostly unlobed leaves, sessile glands, erect inflorescences, cup-shaped flowers, and ovaries with only sessile glands. *Ribes austroecuadorensis* is characterized by ovate and 3-lobed to 3-cleft leaves, erect inflorescences, cup-shaped flowers, and pubescent ovaries. Both species are illustrated and discussed in a systematic context.

**RESUMEN.** Se describen dos especies nuevas andinas del género cosmopolita *Ribes* provenientes de Ecuador y Colombia. *Ribes erectum* es una especie arbustiva que se caracteriza por sus hojas elípticas y enteras, glándulas sésiles, inflorescencias erectas, flores cupuliformes y ovario únicamente con glándulas sésiles. *Ribes austroecuadorensis* se caracteriza por sus hojas ovadas y 3-lobadas a 3-divididas, inflorescencias erectas, flores cupuliformes y ovarios densamente pubescentes. Ambas especies son ilustradas y discutidas en un contexto sistemático.

The genus *Ribes* includes seven subgenera and 150 species (Janczewski, 1907; Valsecchi, 1977). During work on the Saxifragaceae for the *Flora of Ecuador* (Freire-Fierro, in prep.), at least two new species were discovered. *Ribes erectum* and *Ribes austroecuadorensis* belong to the subgenus *Parrilla*, which comprises representatives with functionally dioecious flowers arranged in pendulous or erect inflorescences. *Ribes* subg. *Parrilla* is most diverse in the Neotropics and includes approximately 45 species that occur in the Andean highlands at 2750 to 4267 m. While *R. austroecuadorensis* is endemic to the south of Ecuador, *R. erectum* also occurs in Colombia.

***Ribes erectum*** A. Freire-Fierro, sp. nov. TYPE: Ecuador. Azuay: Carretero Cuenca–Sayausí–Molleturo, 9 km from entrance to Parque Recreacional Cajas, 79°09'W, 02°49'S, 3370 m (pistillate), *Freire-Fierro & Romoleroux 2416* (holotype, QCA; isotype, AAU). Figure 1.

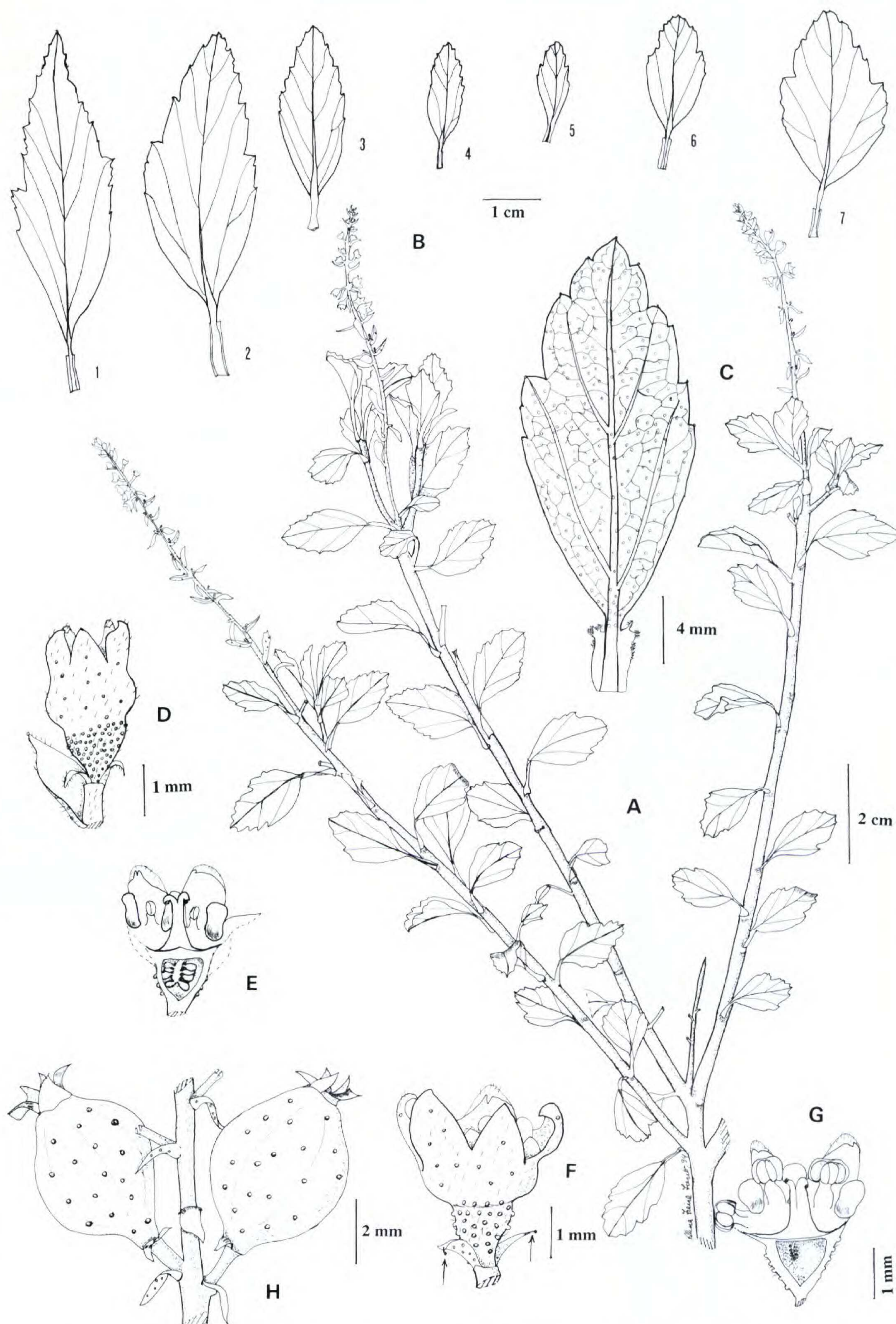
*Ribes lehmannii* Janczewski similis sed inflorescentiis erectis, floribus cupulatis et hypanthio minus quam 2 mm longo differt.

Shrub, (0.2–)1–4(–6) m tall, erect or seldom scandent. Branches slightly hairy with sessile glands. Lamina elliptic in outline, 1.4–4.0(–5.5) cm long, 0.9–1.5(–2.5) cm wide, the base decurrent to cuneate, the apex acute, unlobed to weakly 3-lobed, the margin serrate, subcoriaceous, with sessile glands beneath and above; petioles 0.5–0.7(–1.3) cm long, glabrescent, with a winged base. Inflorescence 4.5–8.0(–10) cm long, erect, 16–30-flowered; rachis densely pubescent; bracts narrowly ovate, 2–4(–5) × 0.5–1 mm, base truncate, apex acute, ciliate, dorsal face densely pubescent with sessile glands; pedicel 1.0–1.5 mm long, densely pubescent with sessile glands; bracteoles obovate, 0.8–1.4 mm long, 0.5 mm wide, apex acute with a stipitate gland. Flowers cup-shaped, 2.0–4.5 mm long, 2–4(–5) mm wide; hypanthium 0.8–2 mm long, calyx lobes 1–2 mm long, 0.8–1.5 mm wide, slightly reflexed, densely pubescent with sessile glands, externally green-brown, internally pale green; petals 0.5–0.8 mm long, 0.5–1 mm wide, apex obtuse to acute, green-yellowish; ovary nearly glabrous with sessile glands; staminate flower with filaments 0.5–1 mm long, anthers 0.5 mm long, 0.5–0.8 mm wide, pistil rudimentary; pistillate flower with stamens rudimentary, ovary bicarpellate, styles 1.0–1.8 mm long, bilobed 1/3 to 1/5 of their length. Fruit spheroidal, about 8 mm long, 7 mm wide, erect, with sessile glands, striate, green to yellow.

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Figure 1. *Ribes erectum* A. Freire-Fierro. —A. Flowering branch. Note short persistent peduncles where older flowers have fallen away. —B1–B7. Leaves. —C. Abaxial side of the leaf. —D. Pistillate flower. —E. Longitudinal section of a pistillate flower. —F. Staminate flower (arrows showing stipitate glands in bracteoles). —G. Longitudinal section of a





staminate flower. —H. Young fruit. (A, drawn from *Asplund 17837*; B4, B6, C, D, E, and H, from *Freire-Fierro & Romoleroux 2416*; B1, F, and G, from *Luteyn & Lebrón-Luteyn 5771*; B2, from *Harling 1247*; B3, from *Jaramillo 7319*; B5, from *Løjtnant & Molau 14277*; B7, from *Harling et al. 8712*.)



**Variation and affinities.** *Ribes erectum* is a distinctive species that has not been described before even though it is quite common. The presence of sessile to subsessile glands in the adaxial and abaxial surfaces of the leaves, the erect inflorescences, the cup-shaped flowers, and the erect and yellowish fruits are the distinguishing features of this species. According to Janczewski's (1907) taxonomic treatment of the genus, all the Ecuadorian species of *Ribes* have pendulous inflorescences, but the two newly described species have erect inflorescences. Representatives of *R. erectum* have sometimes been misidentified as *R. lehmannii* because of the cuneate leaves with sessile glands; however, they differ from the latter by the cup-shaped flowers, and the green to green-brownish hypanthia less than 2 mm long.

**Flowering and fruiting.** *Ribes erectum* flowers throughout the year, and fruiting specimens have been collected from February to August, and from November to December.

**Distribution and habitat.** This species occurs on grass páramo and in wet montane forests at 2750 to 3920 m. It has been collected in the central and southern Ecuadorian Andes, and in southern Colombia.

**Paratypes.** COLOMBIA. **Nariño:** Volcán Galeras, near Pasto, ca. 2800 m, *Gentry et al.* 30489 (MO). ECUADOR. **Pichincha:** Sebritana, Hda. Pedregal and Yanaurcu, 3400–3500 m, *Acosta Solís* 8307 (F), *Jameson s.n.* (K), *Jameson & Hooker s.n.* (1838) (K). **Cotopaxi/Napo:** Salcedo–Napo road, 22–47 km to the N, 3400–3920 m, *Freire-Fierro & Viteri* 2447a, 2447b (AAU, QCA), *Jørgensen et al.* 56322 (AAU, QCA, QCNE); km 52, *Løjtnant & Molau* 13782 (AAU, GB, QCA). **Tungurahua:** Llanganati, Chihuila Sacha or Ainchilibí, 3750 m, *Barclay & Juajibioy* 8962 (MO); Aucacocha–Tambo, 2750–2800 m, *Jaramillo* 6297 (QCA); N of Choza Aucacocha, 3500 m, *Øllgaard et al.* 38608 (AAU). **Chimborazo:** Alao–Llactapamba road, Páramo de Culebrillas, *Cerón et al.* 11775 (MO, QCNE); Alao–Huamboya road, km 8, 3700 m, *Jørgensen* 91801 (AAU, QCA, QCNE); valley of Río Alao, 3450 m, *Huttel* 951 (QCA); to 10 km NE of Alao, Cuspipaccha, 3500 m, *Øllgaard et al.* 38133 (AAU, NY, QCA); Guayllabamba–Alao road, 2900–3100 m, *Romoleroux* 368 (F, NY, QCA); Atilio, slope of Laguna Negra, 3600 m, *Brandbyge* 60978 (AAU); Riobamba–Alao–Huamboya road, Quebrada Supaycahuan, 3570–3620 m, *Zak & Jaramillo* 3307 (MO). **Cañar:** Azogues–Moloboc Grande road, 3200–3450 m, *Jaramillo* 9856 (AAU, QCA), *Romoleroux et al.* 399 (F, NY, QCA); Azogues–Pindilig road, km 21–22, 3250–3350 m, *Løjtnant & Molau* 14277 (AAU, GB); 30 km NE of Azogues, Río Dudas, *Prieto P-150* (NY); Taday, 2–3 km W, 3100–3200 m, *Harling* 27243 (GB); Virgin Corral, 4.5 km SW, 3150 m, *Holm-Nielsen et al.* 29214 (AAU). **Azuay:** Chiquintad–Planta Hidroeléctrica Chanlud–Tuni road, km 27, at Presa Chanlud, 3400–3500 m, *Øllgaard et al.* 98652 (AAU, QCA, QCNE); Chiquintad–Represa de Empresa Eléctrica–Labrado road, *Jaramillo et al.* 8903 (AAU, F, NY, QCA);

Cuenca–Molleturo road, Parque Recreacional Cajas, 3350–3890 m, *Böhlin et al.* 1393 (GB, QCA), *Freire-Fierro & Romoleroux* 2416 (AAU, QCA); Laguna Surucuchu, Sayausí, W side, 3200–3300 m, *Harling* 25474 (GB); 10 km W, 3300 m, *Harling et al.* 20222 (GB); Soldados, below Quinoas, 3400 m, *Harling et al.* 8747 (GB), *Huttel* 986 (QCA); Guabidula, *Jaramillo & Winnerskjold* 5424 (QCA); Llavince, *León et al.* 2573 (QCA); 25 km of Cuenca, 3500 m, *Madsen et al.* 36593 (AAU); 1 km before the Control to Loja, deviation to Yanasacha, *Jaramillo & Boeke* 300, 342 (AAU, QCA); Río Machángara, NW of Cuenca, 3300–3400 m, *Sparre* 18569 (S); Sevilla de Oro, 4–6 km N, 2953–3280 m, *Camp E-4715* (A, F, K, S, US, W); 6–8 km NNE, Páramo del Castillo, 3280–3390 m, *Camp E-5127* (AAU, NY, S, US); 3700 m, *Harling* 1247 (S); 10 km NNE, 3200–3350 m, *Øllgaard & Balslev* 9425 (AAU, F, MO, NY, S); Gualaceo–San Juan Bosco road, 3 km W of pass, 3250–3350 m, *Laegaard* 53949 (AAU, QCA); Cuenca–Machala road, km 22, turnoff towards Patacocha, km 7, 3000 m, *Jørgensen et al.* 91910 (AAU, QCA, QCNE), *Romoleroux et al.* 444 (NY, QCA); Gañadel, 3450 m, *Asplund* 17837 (S); Cumbe, 3100 m, *Harling et al.* 8712, 8714 (GB); 10–20 km S, páramo of Tinajillas, 3000–3400 m, *Camp E-378* (NY); 3700 m, *Camp E-493* (NY); 3000–3300 m, *Harling et al.* 20115 (GB); Cuenca–General Plaza (Limón) road, 3100–3500 m, *van der Werff & Gudiño* 11434 (MO, QCNE); 2800–3500 m, *van der Werff & Gudiño* 11079 (MO); páramo de Patococha, 3300–3400 m, *Barclay & Juajibioy* 8622 (MO, US); 3200–3300 m, *Dorr & Barnett* 5995 (NY, QCA, QCNE), *Harling & Andersson* 22719 (GB, QCA); summit of Cordillera Zapote Naida, 3450 m, *Harling* 25974 (GB), *Jørgensen* 92674 (AAU, MO, QCA, QCNE), *Luteyn & Lebrón-Luteyn* 5771 (AAU, GB, NY, QCA), *Luteyn* 13410 (NY, QCA, QCNE); 21 km E of Gualaceo, 3200 m, páramo de Culebrillas, *Luteyn et al.* 14116 (MO, NY); *Romoleroux* 432 (NY p.p., QCA), 437 (NY, QCA); between Huagrancha and Mt. Galápagos, 3140–3505 m, *Steyermark* 53465 (MO, NY). **Loja:** Cerro Chinchilla, Celén, 3500–3780 m, *Jaramillo* 7319 (AAU, GB, MO, QCA); Loja–Saraguro road, 5 km N of San Lucas, 2800 m, *Böhlin & Böhlin* 1028 (GB); Loma del Oro, turnoff towards Fierro–Urco, km 12, 3400–3650 m, *Jørgensen & Madsen* 65805, 65821 (AAU, QCA), *Madsen & Ellemann* 85636 (AAU, QCA, QCNE); 10 km of Pichig, 3000–3500 m, *Madsen* 86739 (AAU), *Øllgaard et al.* 90990 (AAU, F, MO, QCA, QCNE), *Romoleroux* 761 (AAU, NY, QCA). **Napo:** Río Chalupas, 3700 m, *Laegaard* 101779 (AAU, QCA); Río Langoa, 3400 m, *Jaramillo* 9610 (AAU, QCA).

***Ribes austroecuadorensis* A. Freire-Fierro, sp. nov.** TYPE: Ecuador. Loja: Parque Nacional Podocarpus, E of Nudo de Cajanuma, trail from Centro de Información toward Lagunas del Compadre, ca. 79°10'W, 04°05'S, 3100–3200 m (pistillate), *Øllgaard* 90339 (holotype, QCA; isotypes, AAU, QCNE). Figure 2.

*Ribes andicola* Janczewski similis sed inflorescentiis erectis, foliis 3-fissis et bracteis quam 5 mm longioribus differt.

Low prostrate shrub. Branches hairy. Lamina ovate in outline, 1.7–5 cm long, 1.0–3 cm wide, base cuneate, apex acute, 3-lobed–3-cleft, margin



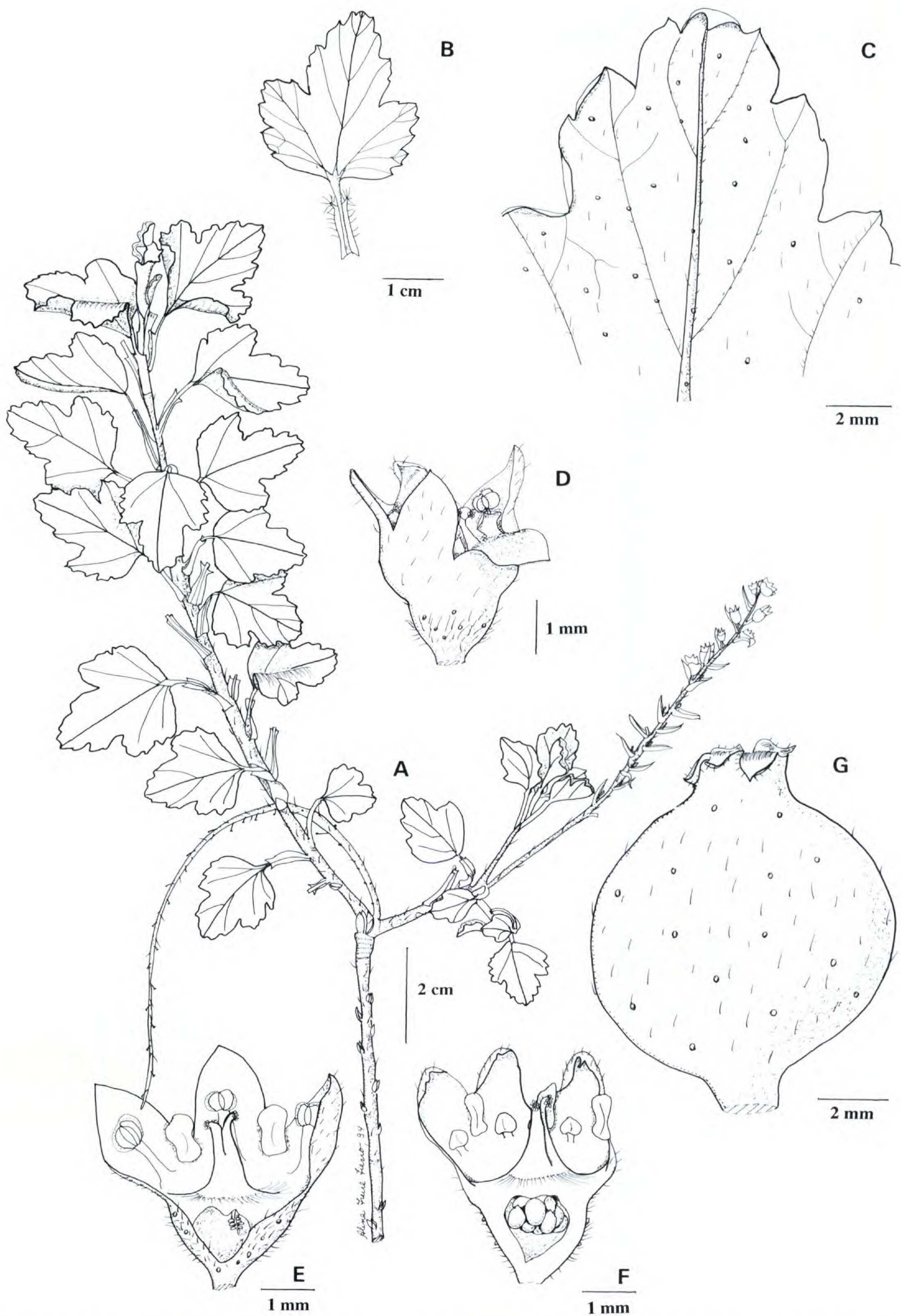


Figure 2. *Ribes austroecuadorensis* A. Freire-Fierro. —A. Flowering branch. —B. Leaf. —C. Abaxial side of the leaf. —D. Staminate flower. —E. Longitudinal section of a staminate flower. —F. Longitudinal section of a pistillate flower. —G. Fruit. (A–C, F, G, drawn from Øllgaard 90339; D, E, from Madsen & Pedersen 86464.)



serrate, leathery, slightly pilose with sessile glands beneath, pubescent above; petioles 0.8–2.5 cm long, hairy, with a winged and fringed base. Inflorescence 5–11 cm long, erect, 26–28-flowered; rachis hairy; bracts narrowly elliptic, 5–8 mm long, 1.5 mm wide, base truncate, apex acute, ciliate with subsessile glands, dorsal face hairy with sessile glands; pedicel 1.5 mm long, hairy; bracteoles obovate, 1.0–1.5 mm long, 0.5 mm wide, apex obtuse with a terminal stipitate gland. Flower cup-shaped, 4–5 mm long, 3.5–4.5 mm wide; hypanthium 1.8–3 mm long, calyx lobes 2 mm long, 1.2–1.5 mm wide, reflexed, hairy, externally pale green, pinkish tinged; petals 0.8–1 mm long, 0.5 mm wide, apex obtuse; ovary densely pubescent with sessile glands; staminate flower with filaments 1.0–1.2 mm long, anthers 0.5 mm long, 0.5–0.7 mm wide, pistil rudimentary; pistillate flower with stamens rudimentary, ovary bicarpellate, styles 1.5–1.8 mm long, bilobed  $\frac{1}{3}$  of their length. Fruit spheroidal, about 7.8 mm long, 8.5 mm wide, erect, hairy with sessile glands, striate.

*Ribes austroecuadorensis* is a rare species known from only two localities. Although this species resembles *R. andicola*, it differs by the 3-cleft leaves, the erect inflorescences, and the bracts, which are longer than 5 mm. In addition, *R. austroecuadorensis* has pinkish petioles and bicolored leaves, characters absent in *R. andicola*. Besides *R. austroecuadorensis*, *R. leptostachyum* is the only other

species of *Ribes* in Ecuador with up to 3-cleft leaves.

*Flowering and fruiting.* February and November.

*Distribution and habitat.* *Ribes austroecuadorensis* occurs in scrub páramo and elfin forest, at 3000 to 3480 m elevation. It is endemic to southern Ecuador.

*Paratypes.* ECUADOR. **Azuay:** Gualaceo–Limón road, ca. 23 km W of Gualaceo, Páramo de Culebrillas, 3477 m, *Luteyn et al.* 14127 (QCA). **Loja:** Parque Nacional Podocarpus, Lagunas de Compadre, ca. 6 hours walking from Centro de Información, 3000–3400 m, *Madsen & Pedersen* 86464 (AAU, QCA).

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